IN THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Canceled)

2. (Currently Amended) A system for performing a simulation, the system comprising:

~~a first program;~~

~~a measurement/control program;~~

~~a simulation program; and~~

one or more processors;

memory storing program instructions; and

an input device;

~~wherein the system can be configured to turn a simulation mode either on or off;~~

~~wherein the first program is operable to:~~

wherein the program instructions are executable by the one or more processors to:

turn a simulation mode either on or off in response to user input;

receive a request for input from [[the]] a measurement/control program;

determine whether the ~~system is in~~ simulation mode is turned on or off; and

selectively route the request for input, depending on whether the ~~system is in~~ simulation mode is turned on or off, wherein selectively routing the request for input comprises:

routing the request for input to [[the]] a simulation program if the ~~system is in~~ simulation mode is turned on;

routing the request for input to the input device if the ~~system is not in~~ simulation mode is turned off.

3. (Currently Amended) The system of claim 2,

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wherein the measurement/control program performs the request for input identically, regardless of whether ~~or not~~ the ~~system is in~~ simulation mode is turned on or off.

4. (Currently Amended) The system of claim 2, further comprising:

an output device;

wherein the ~~first program is~~ program instructions are further ~~operable~~ executable by the one or more processors to:

    receive a request for output from the measurement/control program; and

    selectively route the request for output, depending on whether the ~~system is in~~ simulation mode is turned on or off, wherein selectively routing the request for output comprises:

    routing the request for output to the simulation program if the ~~system is in~~ simulation mode is turned on;

    routing the request for output to the output device if the ~~system is not in~~ simulation mode is turned off.

5. (Currently Amended) The system of claim 2,

~~wherein the first program determines that the system is in simulation mode and routes the request for input to the simulation program;~~

wherein after determining that the simulation mode is turned on and routing the request for input to the simulation program, the ~~first program is~~ program instructions are further ~~operable~~ executable by the one or more processors to:

    receive results for the input request from the simulation program; and

    pass the results received from the simulation program to the measurement/control program.

6. (Currently Amended) The system of claim 2,

wherein the request for input comprises a request for input through a first I/O channel;

wherein the ~~first program is~~ program instructions are further ~~operable~~ executable by the one or more processors to determine that the first I/O channel is mapped to a first software routine of the simulation program;

wherein said routing the request for input to the simulation program comprises routing the request for input to the first software routine of the simulation program.

7. (Currently Amended) The system of claim 2, ~~further comprising:~~

~~a configuration program;~~

wherein the ~~configuration program is operable~~ program instructions are further executable by the one or more processors to map the first I/O channel to the first software routine of the simulation program in response to user input requesting the first I/O channel to be mapped to the first software routine of the simulation program.

8. (Canceled)

9. (Currently Amended) The system of claim 2,

wherein ~~turning~~ the simulation mode ~~can be turned~~ either on and off comprises turning the simulation mode either on or off without requiring the measurement/control program to be modified, wherein the measurement/control program operates correctly, regardless of whether ~~or not the system is in~~ the simulation mode is turned on or off.

10. (Currently Amended) The system of claim 2, ~~further comprising:~~

~~a first computer system, wherein the input device is coupled to the first computer system;~~

wherein the measurement/control program ~~executes on the first computer system~~ is stored in the memory and executed by the one or more processors.

11. (Currently Amended) The system of claim 10,

wherein the simulation program ~~is~~ also ~~executes on the first computer system~~ stored in the memory and executed by the one or more processors.

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12. (Currently Amended) The system of claim 10, ~~further comprising:~~

wherein the one or more processors are one or more processors of a first computer system included in the system;

wherein the system further includes a second computer system[[,]] ~~wherein the second computer system is~~ coupled to the first computer system; ~~by a network;~~

wherein the simulation program executes on the second computer system.

13. (Currently Amended) The system of claim 2,

wherein the simulation program ~~is operable~~ executes to simulate a physical system.

14. (Currently Amended) The system of claim 2,

wherein the simulation program ~~is operable~~ executes to simulate operation of a device.

15. (Previously Presented) The system of claim 2,

wherein the measurement/control program comprises a graphical program, wherein the graphical program comprises a plurality of interconnected nodes that visually indicate functionality of the graphical program.

16. (Previously Presented) The system of claim 2,

wherein the simulation program comprises a graphical program, wherein the graphical program comprises a plurality of interconnected nodes that visually indicate functionality of the graphical program.

17. (Currently Amended) A method for performing a simulation, the method comprising:

turning a simulation mode either on or off in response to user input;

executing a measurement/control program;

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executing a simulation program, wherein the simulation program ~~is operable~~ executes to simulate a system;

receiving a request for input from the measurement/control program;

determining whether the simulation mode is turned on or off; and

selectively routing the request for input, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for input comprises:

routing the request for input to the simulation program if the simulation mode is turned on;

routing the request for input to an input device if the simulation mode is turned off.

18.   (Currently Amended)   A computer-readable memory medium ~~comprising~~ storing program instructions for performing a simulation, wherein the program instructions are executable to:

turn a simulation mode either on or off in response to user input;

receive a request for input from a measurement/control program;

determine whether the simulation mode is turned on or off; and

selectively route the request for input, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for input comprises:

routing the request for input to a simulation program if the simulation mode is turned on;

routing the request for input to an input device if the simulation mode is turned off.

19. (New) The method of claim 17, further comprising:

receiving a request for output from the measurement/control program; and

selectively routing the request for output, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for output comprises:

routing the request for output to the simulation program if the simulation mode is turned on;

routing the request for output to the output device if the simulation mode is turned off.

20. (New) The computer-readable memory medium of claim 18, wherein the program instructions are further executable to:

receive a request for output from the measurement/control program; and

selectively route the request for output, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for output comprises:

routing the request for output to the simulation program if the simulation mode is turned on;

routing the request for output to the output device if the simulation mode is turned off.

21. (New) The method of claim 17, further comprising:

after determining that the simulation mode is turned on and routing the request for input to the simulation program, receiving results for the input request from the simulation program, and passing the results received from the simulation program to the measurement/control program.

22. (New) The computer-readable memory medium of claim 18, wherein after determining that the simulation mode is turned on and routing the request for input to the simulation program, the program instructions are further executable to:

receive results for the input request from the simulation program; and

pass the results received from the simulation program to the measurement/control program.